Collective Regulation of Adolescent Misbehavior:
Validation Results From Eighty Chicago Neighborhoods

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This study tested a neighborhood-level approach to what often is treated as a purely familial or within-household phenomenon—the informal social control of children. The data analyzed were drawn from a new, multilevel assessment of 80 neighborhoods in Chicago. The results showed that, first, informal social control can be measured reliably at the neighborhood level. Second, three dimensions of neighborhood structure—concentrated poverty, ethnicity/immigration, and residential stability—were found to explain significant amounts of variation in child social control. Third, informal social control mediated 50% of the effect of residential stability on rates of adolescent delinquency. Even after adjusting for prior levels of crime in the neighborhood, informal social control emerged as a significant inhibitor of adolescent delinquency. The collective social control of children is an important construct that should be added to theoretical accounts and research projects that stress social regulation in families.

There is widespread consensus in the research literature that families matter a great deal in regulating and controlling adolescent delinquency. In a recent meta-analysis of extant research, Loeber and Stouthamer-Loeber (1986) found that family socialization variables, such as lack of parental supervision, parental rejection, and parent/child involvement, were among the most powerful predictors of delinquency. Similarly, Hirschi (1995) and Patterson (1982) described a set of parenting skills that revolve around the monitoring and supervision of youth behavior, consistent punishment, and the formation of close social bonds between parents and children. These three dimensions of socialization in the family—discipline, supervision/monitor-

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ing, and attachment—consistently are related to delinquency, according to available accounts (see also Sampson & Laub, 1993, chaps. 4-5).

When considering adolescent social regulation fostered by supervision and monitoring, however, criminologists and developmental theorists alike tend to assert a dyadic or interpersonal framework that locates control within families or *under the roof* (see Sampson, 1992). This viewpoint, although not incorrect, neglects the social controls that may or may not exist in the ambient context of neighborhoods (see also Elliott et al., 1996). This is unfortunate, for as Furstenberg (1993) noted, social control strategies tied to the community may be no less consequential for children's development than are the more direct proximate controls observed inside the home.

The present study addressed that gap in knowledge by extending a neighborhood-level approach to what often is treated as a purely familial or within-household phenomenon—informal social control. The specific goal was to validate a measure of child social control at the neighborhood level. The data are from a new multilevel study of 80 neighborhoods in Chicago.

THEORETICAL ORIENTATION: SOCIAL DISORGANIZATION THEORY

The conceptual framework of this study draws on the Chicago school tradition of urban sociology pioneered by Park and Burgess (1921) and Shaw and McKay. In their classic work, *Juvenile Delinquency and Urban Areas*, Shaw and McKay (1942/1969) argued that three structural factors—low economic status, ethnic heterogeneity, and residential mobility—led to the disruption of community social organization, which in turn accounted for variations in crime and delinquency rates. As recently extended by Kornhauser (1978), Bursik (1988), and Sampson and Groves (1989), social disorganization may be defined as the inability of a community structure to realize the common values of its residents and maintain effective social controls.

The social disorganization approach is grounded in what Kasarda and Janowitz (1974, p. 329) call the *systemic* model, in which the local community is viewed as a complex system of friendship and kinship networks, as well as formal and informal associational ties rooted in family life and ongoing socialization processes (for further elaboration see Sampson, 1988). From this view, both social organization and social disorganization are inextricably tied to systemic networks that facilitate or inhibit social control. When formulated in this way, social disorganization is analytically separable not only from the processes that may lead to it (e.g., poverty, residential

change), but from the degree of criminal behavior that may be a result (Bursik, 1988). This conceptualization also goes beyond the traditional account of community as a strictly geographical phenomenon by focusing on the social connections among local residents (Leighton, 1988).

Both Bursik (1988) and Sampson and Groves (1989) have explicated the structural dimensions of community social organization that bear on adolescence and the control of delinquency. For the purposes of the present article, one of the most important dimensions is the ability of a neighborhood to supervise and control adolescent peer groups—especially gangs. As discovered originally by Thrasher (1963), the origins of many gangs are unsupervised, spontaneous play groups among children. Even nongang delinquency tends to be a group phenomenon (for a review, see Reiss, 1986a), indicating that the capacity of the community to control the group-level dynamics of children and adolescents is a key theoretical mechanism linking community characteristics with delinquency. As Shaw and McKay (1942/1969) argued, residents of stable, cohesive communities are better able to control the adolescent dynamics that form the setting of group-related crime. Examples of informal social controls include supervising leisure-time youth activities, intervening in street-corner congregation (Maccoby, Johnson, & Church, 1958; Shaw & McKay, 1942/1969; Thrasher, 1963), and challenging adolescents "who seem to be up to no good" (Skogan, 1986, p. 217; Taylor, Gottfredson, & Brower, 1984).

In short, the foregoing conceptualization leads to a theoretical distinction between social control at the individual/familial and neighborhood levels. At the individual level, social regulation inheres in informal social controls (e.g., monitoring and supervision) provided by families. The analog at the neighborhood level is aggregate patterns of informal social control (e.g., collective supervision, neighborhood monitoring) found in areas with high levels of social organization. Integrating social disorganization theory with the literature on delinquency and adolescent behavior leads to the hypothesis that neighborhood-level social control is an inhibiting factor in adolescent misbehavior, independent of the social and demographic composition of the population.

METHODOLOGICAL BARRIERS TO STUDYING NEIGHBORHOOD SOCIAL CONTROL

Previous research largely supports the core hypothesis of Shaw and McKay (1942/1969) that the structural factors of poverty, residential mobility, and heterogeneity explain variations in crime rates (for detailed reviews,

see Bursik & Grasmick, 1993; Sampson & Lauritsen, 1994). Nevertheless, it has proven exceedingly difficult to study the mechanisms of collective social control hypothesized by social disorganization theory. Indeed, the correlation of crime with neighborhood demographic characteristics is consistent with many differing theoretical perspectives. For example, Kornhauser (1978) argued that most criminological theories take as their point of departure the same independent variables—especially socioeconomic status. The process variables that intervene between community structure and crime are at issue, and to test competing theories adequately, researchers must establish the connection to crime of the interpretive variables each theory implies (Kornhauser, 1978).

Unfortunately, traditional ecological studies do not contain information on the informal social controls hypothesized to link neighborhood structure and delinquency. Such an examination requires extensive original data collection within *each* of the neighborhoods in the analysis. Because governments collect little information on the collective properties of the administrative units for which they routinely report information, little causal information is available for those same units (Reiss, 1986b). Because previous neighborhood-level studies have relied primarily on census demographic data, they rarely have been able to provide measures of social control.

Only a few studies have examined directly the quantitative dimensions of informal social control. Going well beyond census data, for example, the research of Maccoby et al. (1958) and Hackler, Ho, and Urquhart-Ross (1974) was provocative and supported the idea that collective social control inhibits adolescent delinquency. Yet these studies were limited to a handful of communities, precluding comprehensive analysis and empirical examination of *between*-community differences.[1]

Turning to more recent quantitative efforts, two studies bear on the argument presented in this article, that between-neighborhood variations in social control are salient. In the first, Sampson and Groves (1989) analyzed the British Crime Survey (BCS), a nationwide survey of England and Wales conducted in 1982 and 1984. Sampling procedures resulted in the proportionate selection of 60 addresses within each of more than 200 local communities in Great Britain. Aggregating survey-based measures to the community level, Sampson and Groves (1989) reported that the prevalence of unsupervised peer groups in a community had the largest overall relation to rates of victimization by mugging/street robbery and stranger violence in 1982. Moreover, the largest overall effect on offender-based rates of personal violence was unsupervised peer groups (p. 793). Unsupervised peer groups had similar positive effects on robbery and assault in the 1984 BCS.

However, the single-item measure used by Sampson and Groves (1989) did not directly tap the construct of collective social control but rather its hypothesized sequelae—nascent adolescent gangs. That is, the prevalence of unruly adolescents is arguably an after-the-fact indicator that does not refer necessarily to the efforts (perceived or actual) of local residents to achieve social control. It may be that high levels of adult control are insufficient to quell adolescent supremacy in peer relations (Reiss, 1986b). Furthermore, as critiqued by Fischer (1995), the index used by Sampson and Groves "could also be read as a measure of local alternative subcultures, the availability of gangs with which to 'hang'" (p. 564). Coupled with the absence of information on aggregate-level reliability, the presence of unruly adolescents in the neighborhood is problematic as a direct measure of proactive, collective regulation.

A second study, from the Research Network on Successful Adolescent Development, provides more direct evidence on social control. Elliott et al. (1996) examined survey data from parallel studies carried out in 1990 in Chicago and Denver. Data from the Chicago site were collected from about 500 Black families, most of them poor, living in more than 50 Chicago census tracts in 1990, whereas the Denver data included over 1,500 youth living in over 30 block groups. A multilevel analysis revealed that a measure of informal control was related significantly and negatively to adolescent problem behavior in both sites. Control also mediated the prior effects of neighborhood structural disadvantage—declining poor neighborhoods displayed less ability to maintain social control and in turn suffered higher delinquency rates.

The informal control scale in Elliott et al. (1996) included items measuring dimensions of mutual respect (e.g., racial or cultural groups who do not get along), institutional controls (e.g., police not caring about neighborhood, unsafe streets), and neighborhood bonding (e.g., satisfaction with neighborhood), in addition to perceived informal control (e.g., how likely it is that a person would do something if someone were breaking into a neighbor's house in plain sight). Like the Sampson and Groves (1989) study, the informal control scale thus includes some of the hypothesized consequences of weakened community controls (e.g., unsafe streets, conflict among neighbors).

Nonetheless, the research of Elliott et al. (1996) and Sampson and Groves (1989), along with earlier efforts by Maccoby et al. (1958), Hackler et al. (1974), and Simcha-Fagan and Schwartz (1986), supported the notion that communities characterized by (a) poverty and rapid social change and (b) unsupervised adolescent peer groups and attenuated control of public space face an increased risk of adolescent misbehavior. Along with the results of

ethnographic research on gang delinquency that point to the importance of informal community structures in controlling the formation of youth gangs (Sullivan, 1989), the empirical data provide motivation for studying further the mechanisms by which structural variations in social organization explain macrolevel variations in delinquency.

RESEARCH DESIGN

The present study built on recent efforts to measure empirically the between-neighborhood dimensions of social regulation (Elliott et al., 1996; Sampson & Groves, 1989). In contrast to the dominant focus in social research on individual-level explanations of delinquent behavior, the goal was to explain neighborhood-level variations in rates of informal social control and adolescent misbehavior. In particular, Which structural characteristics of neighborhoods are associated with high (or low) rates of adolescent social regulation? Do neighborhoods with high social control have lower rates of youth crime, independent of structural disadvantage and other factors?

To answer these questions, the present study analyzed data collected by the Project on Human Development in Chicago Neighborhoods (PHDCN). The PHDCN is a large-scale interdisciplinary study that aims to increase understanding of how community-level, family-level, and individual-level factors interact in the development both of prosocial and antisocial (including criminal) behavior. The major component of the PHDCN is an accelerated longitudinal design incorporating seven age cohorts and some 7,000 male and female subjects. Begun in 1995, the study includes overlapping age cohorts, starting with prenatal development and including subjects at 3-year intervals up to age 18 years. Individuals will be followed and developmental change examined for 8 years, approximating what would be learned from tracking a single birth cohort for some 25 years.

To study neighborhood effects, age-eligible subjects were drawn from a multistage probability sample that represents the ethnic and socioeconomic diversity of Chicago. To operationalize neighborhood, Chicago's 847 populated census tracts were combined to create 343 *neighborhood clusters* (NCs). The overriding consideration in forming NCs was that they should be ecologically meaningful units composed of geographically contiguous census tracts and exhibiting internal homogeneity on a variety of census indicators. Based on research that has compared census tracts and block groups (Elliott et al., 1996), coupled with urban sociological research on neighborhood perceptions (Fischer, 1982), the PHDCN sought an ecological unit

smaller than the 77 established Chicago community areas (average size = 39,000) but large enough to approximate local neighborhoods (on average, around 6,000 to 8,000 people). Geographic boundaries (e.g., railroad tracks, parks, freeways) and knowledge of Chicago's local community areas and neighborhoods were used to guide this process.[2]

The sample design for the PHDCN was predicated on probabilistic sampling methods both for the cohort and community survey. A total of 80 sampled NCs for the main cohort study were spread across 21 strata, defined by cross-classifying socioeconomic status (SES) and race/ethnicity. This figure was arrived at after detailed power analysis that took into account key hypotheses at the individual and neighborhood levels. Census data were used to define the two stratification variables: racial/ethnic mix (three homogeneous strata and four heterogeneous strata) and an SES scale trichotomized into equal thirds. The NCs were then cross-classified by these two variables, and a stratified probability sample of 80 NCs was drawn for the main study (Table 1).

Reflecting the unfortunate pattern of segregation by race and class that predominates in American society, the number of NCs falling into the 21 strata created by the cross-classification of racial/ethnic mix and SES was uneven. Although the aim of the PHDCN was to obtain nearly equal numbers of NCs from each of the strata, in fact, three of the 21 strata were empty (e.g., low SES/white) and an additional 3 cells had fewer than 5 NCs. NCs were thus selected with certainty in these 3 cells. In other strata, 4 NCs were selected systematically after sorting by SES and housing density. Because of the sparseness of several strata, a sample of 4 NCs per stratum could not produce the desired total sample of 80 NCs. The balance of NCs was sampled from the largest strata. The resulting sample of 80 NCs (see Table 1) thus capitalizes on, to the maximum extent possible, the range of race/ethnic diversity and SES stratification that currently exists in the city of Chicago.

Community Survey

The community survey (CS) of the PHDCN was a multidimensional assessment by residents of the structural and cultural organization of their neighborhoods. To gain a complete picture of the city's neighborhoods, 8,872 Chicago residents representing all 343 NCs were interviewed in their homes.[3] However, the major effort was concentrated in the 80 stratified NCs, where 3,864 interviews were conducted, an average of 48 per NC. The present article focuses on the 80 NCs and sample of 3,864, reflecting a final response rate of 78%.

TABLE 1: Racial/Ethnic Composition by SES[a] Strata: Distribution of Eighty Sampled Neighborhood Clusters

	SES		
Race/Ethnicity	*Low*	*Medium*	*High*
75% Black or more	9	4	4
75% White or more	0	4	8
75% Hispanic or more	4	4	0
20% Hispanic or more/20% White or more	4	5	4
20% Hispanic or more/20% Black or more	4	4	0
20% Black or more/20% White or more	2	4	4
Neighborhood clusters not classified	4	4	4
Totals	27	29	24

a. SES= socioeconomic status. SES was defined by a six-item scale that summed standardized neighborhood-level measures of median income, percentage college educated, percentage with household income over $50,000, percentage of families below the poverty line, percentage on public assistance, and percentage with household income less than $50,000. In forming the scale, the last three items were reverse coded.

Measuring Social Control

In designing the community survey, the theory of social disorganization and cognate theories of urban sociology guided the measurement of neighborhood constructs (see Sampson, 1992; Sampson & Groves, 1989). Another component of the survey was a detailed assessment of perceived neighborhood boundaries—respondents were asked to name and map their neighborhood using ecological referents. Over 70% of respondents reported that their neighborhood had a name, and the mean number of blocks reported in the neighborhood was 30. Thus there is external evidence that respondents reported neighborhood boundaries much smaller than Chicago's community areas and closer in size to constructed NCs (which contain about 7,500 people on average).

For conceptual clarity, and in keeping with the focused nature of the theoretical ideas traced earlier, the collective social control of children in the neighborhood was examined. Three questions tapped this dimension: (a) If a group of neighborhood children were skipping school and hanging out on a street corner, how likely is it that your neighbors would do something about it? (b) If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would do something about it? and (c) If a child was showing disrespect to an adult, how likely is it that people in your neighborhood would scold that child? For each question, respondents were asked, "Would you say it is *very likely*, *likely*, *unlikely*, or *very unlikely*?"[4] Note that this measure was designed to tap the likelihood of *neighbors'* (not

the respondent's) willingness to intervene. Consistent with the neighborhood-level focus, each respondent thus was used as an informant and asked to rate the collective properties of neighborhood social control.

RELIABILITY

The question remains: Is this measure reliable and valid? The most traditional measure of reliability is the Cronbach alpha, which assesses the internal consistency of items. For the sample of 3,508 with complete data on the scale (91%), the alpha reliability was .79—moderate to high by prevailing standards.

Traditional methods would not suffice in the present design, however. The PHDCN is a multistage design in which individuals are nested within NCs. Informed by social disorganization theory, the main interest is in the reliability of the measure to detect *neighborhood-level* differences in social control. Indeed, reliability coefficients for aggregate measures are not the same as for individual measures, and the former often are much lower. The conditions that increase the reliability of neighborhood-level measures are: (a) large differences among neighborhood means or proportions, (b) small differences (variances) in scores within neighborhoods, and (c) large sample sizes. For example, a measure might have perfect reliability at the individual level, but the corresponding aggregate-level measure may vary little across communities, resulting in low reliability (O'Brien, 1990).

To assess aggregate-level reliability, the Hierarchical Linear Model (HLM) program (Bryk & Raudenbush, 1992) was employed to provide maximum-likelihood estimates of the child social control measure using the formula:

$$\Sigma\left[\frac{\tau_{00}}{\tau_{00}+\sigma^2/n_j}\right]/J.$$

From this formula, it can be seen that the reliability of the estimate of child social control averaged across J (80) neighborhoods increases as the sample size (n) in each of the $_j$ neighborhoods increases and the between-group variance (τ_{00}) increases relative to the within-group variance (σ^2).

The aggregate reliability for the measure of child social control was .81—higher even than the individual-level Cronbach alpha (.79)—indicating that the items successfully tapped mean levels of between-neighborhood variation. Ten percent of the variance was between clusters, and hence there was considerable difference in perceptions among individuals within

the same neighborhood on the level of social control. Still, the between-neighborhood portion of variation was consistent with previous research using global ratings of social contexts (Elliott et al., 1996). More important, the relatively high aggregate-level reliability indicated, with precision, that meaningful differences among neighborhoods in child social control could be assessed.

VALIDATION RESULTS

After satisfying the criterion of reliability, the key analysis turned on a series of validation tests for neighborhood-level variations in collective regulation and adolescent misbehavior. Construct validity, of course, is the extent to which variation in a posited construct is related to other, usually well-measured, benchmarks in the direction predicted by extant theory (Selltiz, Wrightsman, & Cook, 1976, pp. 172-181). Of all forms of validity, construct validity is perhaps the most powerful, based as it is on theory and substantive expectations. The theory advanced earlier posits two such expectations—one is that neighborhood social control should vary systematically with exogenous structural characteristics, and the other is that social control should inhibit delinquent adolescent outcomes.

With respect to the first expectation, social disorganization theory specifically predicts that informal social control should be related positively to neighborhood stability and negatively to poverty and ethnic heterogeneity. To assess these theoretical specifications, the factorial structure of the 80 Chicago neighborhoods was examined, using a principal components analysis (with varimax rotation) on a set of key variables extracted from the 1990 census. Raw census counts were aggregated to the NC level before variable construction (e.g., proportions).

Consistent with recent research on the concentration of poverty (Land, McCall, & Cohen, 1990; Wilson, 1987), variables related to *structural disadvantage* were correlated very highly and hence loaded on the same factor. With an eigenvalue greater than 5, this factor represents economic disadvantage in racially segregated urban neighborhoods and was dominated by high loadings (> .6) for poverty, public assistance, female-headed families, unemployment, and percentage Black. To represent this dimension of concentrated poverty more parsimoniously with respect to extant theory, a factor regression score was calculated that weighted each variable by its factor loading.

The second factor was an *ethnicity/immigration* dimension that captures areas of the city undergoing immigration from Mexico. These areas, primarily on the west and northwest side of Chicago, tend to be characterized by

higher fertility rates and lower rates of college education than are other areas, but not necessarily by greater poverty (which loaded only .37). Variables with factor loadings over .60 included percentage Mexican American, youth (percentage less than 18 years of age), proportion foreign born, and low college education. Similar to the procedures for concentrated poverty, a weighted factor score was created.

The third factor score was dominated by just two variables with very high (> .8) loadings—percentage living in the same house as 5 years earlier and percentage owner-occupied homes (eigenvalue = 2.2). The emergence of a *residential stability* factor was consistent with much past research (see Sampson, 1988; Sampson & Lauritsen, 1994).

There are measurement advantages in using census data for construct validation. The census was measured quite independently from the PHDCN survey; moreover, the census data were collected 5 years earlier, permitting accurate temporal sequencing. The tests to follow thus examined the power of neighborhood ecological characteristics in 1990 to explain subsequent variations in neighborhood social control.

It is interesting to note that the three extracted factors reflect the major ecological dimensions in Chicago found by Shaw and McKay (1942/1969) many years earlier, updated to reflect the changing nature of immigration and racial segregation. Indicating continuity in ecological differentiation, for example, the factors of poverty and stability still emerged more than five decades later. What has changed is that area of residence for African Americans is now confounded with poverty, and the major immigration flow is from Mexico and not Europe. Hence percentage Black cannot be reliably separated from poverty and structural disadvantage at the neighborhood level (see also Land et al., 1990; Massey & Denton, 1993), and the ethnicity factor reflects areas of Hispanic immigration, mostly from south of the border.

Turning to the validation results, bivariate correlations at the neighborhood level were supportive of the major theoretical predictions. Variations in neighborhood social control of children were correlated –.34 with concentrated poverty, –.43 with ethnicity/immigration, and .50 with residential stability. All correlations were significant at the .05 level or less, and in the direction expected. The consistency and magnitude of relations thus supported, at least in bivariate fashion, the notion of construct validity.

Predicting Adolescent Outcomes

The next test introduced a measure of adolescent misbehavior expected to be shaped by neighborhood patterns of social regulation. From the community survey, three questions were selected that tapped patterns of conduct

typical of adolescent delinquency—gang fights, graffiti, and causing trouble in groups. With respect to gangs, respondents were asked how often in the past 6 months there were gang fights in the neighborhood (*often, sometimes, rarely, never*). Respondents were also asked how much of a problem in the neighborhood was "graffiti on buildings and walls" and "groups of teenagers or adults hanging out in the neighborhood and causing trouble" (*a big problem, somewhat of a problem,* or *not a problem*). Not surprisingly, when aggregated to the neighborhood level, these three items were correlated highly (at .74 or higher). They were thus combined to form a composite *delinquency rate* scale.

The aggregate reliability of delinquency rate was .89—even higher than the neighborhood-level reliability of collective social regulation. Moreover, almost 20% of the variance in delinquency was between clusters. The high aggregate-level reliabilities thus indicated that the study was able to measure meaningful differences among neighborhoods both in collective social control *and* rates of delinquency.

What, in turn, do the covariations reveal about these two constructs? They were correlated –.64 ($p < .01$), indicating that neighborhoods with high levels on the measure of collective social regulation of children also exhibited substantially lower rates of adolescent delinquency in the form of gang fights, graffiti, and peer-group disorder. This finding conforms to the predictions of the revised social disorganization theory articulated in Sampson (1992) and Sampson and Groves (1989).

MULTIVARIATE VALIDATION

The final set of tests examined the ability of neighborhood social control to explain variations in adolescent delinquency independent of key social and demographic characteristics. As noted previously, social disorganization theory posits that child social control is a salient neighborhood predictor, even after adjusting for poverty, heterogeneity, and stability. Moreover, the informal social control of children should *mediate* some of the effect of ecological structure on delinquency rates.

Table 2 presents the results of the multivariate assessment. The first two columns display a weighted least squares regression of variations in social control predicted by concentrated poverty, ethnicity, and residential stability.[5] Consistent with social disorganization theory, all three factors accounted for variations in child social control. The largest predictor was neighborhood stability—the higher the level of residential stability, the higher the reported levels of collective social regulation. This finding supported a long tradition

TABLE 2: Weighted Least Squares Neighborhood-Level Regression of Variations in Child Social Control and Delinquency: Eighty Chicago Neighborhoods, 1995

	Child Social Control		*Delinquency*	
	B	t *ratio*	*B*	t *ratio*
Structural disadvantage	−.36	−4.74*	.38	5.72*
Ethnicity/immigration	−.44	−5.78*	.64	9.25*
Residential stability	.50	6.65*	−.10	−1.36
Child social control			−.18	−2.09*
	$R^2 = .56$*		$R^2 = .75$*	

*$p < .05$.

of theorizing in urban sociology, exemplified by the systemic model of community (Sampson, 1988). Social control also was significantly lower in neighborhoods characterized by structural disadvantage and social change in the form of immigration from Mexico.

Columns 3 and 4 display the effects both of ecological structure and social control on the delinquency rate. The results show that child social control at the neighborhood level has a significant and fairly substantial negative relation with delinquency rate independent of poverty, ethnicity/immigration, and stability. Social control also mediated about 50% of the effect of stability on delinquency. Specifically, when child social control was not included in the model (i.e., the reduced form) the direct effect of stability on delinquency was −.19 (*t* ratio = −3.22, table not shown). This coefficient diminished to insignificance ($\beta = -.10$, *t* ratio = −1.36) once variations in social control were introduced (see columns 3 and 4). Although social control also mediated some of the effects of structural disadvantage and ethnicity/immigration (15% and 11%, respectively), these latter factors clearly maintained a strong direct effect on delinquency rate.

Finally, to provide the strictest test possible in validating the measure of collective social regulation, neighborhood-level variations in prior crime were introduced as a control variable. Skogan (1986) has provided an overview of some of the feedback processes of crime itself, including (a) physical and psychological withdrawal from community life, (b) a weakening of the informal social control processes that inhibit crime, and (c) a decline in the organizational life and mobilization capacity of the neighborhood. He has argued that residents in neighborhoods with high crime rates may be deterred from engaging in collective social control or other forms of mobilization out of fear of retaliation from neighborhood youth.

To account for this possibility, crime-incident data from 1993 were aggregated to the cluster level for each of the 80 NCs and normed by population

TABLE 3: Weighted Least Squares Neighborhood-Level Regression of Variations in Delinquency, Controlling for Prior Crime: Eighty Chicago Neighborhoods, 1995

	Delinquency			
	Model 1		*Model 2*	
	B	t *ratio*	*B*	t *ratio*
Lagged crime rate	.18	1.96	.05	.44
Child social control	−.57	−6.22*	−.18	−2.07*
Structural disadvantage			.33	2.71*
Ethnicity/immigration			.64	9.21*
Residential stability			−.09	−1.20
	R^2 = .44*		R^2 = .75*	

*$p < .05$.

size.[6] Informed by principal components analysis, a crime-rate scale was created that summed standardized rates of homicide, robbery, aggravated assault, weapon use, and drug violations. These crime rates were related very highly, reflecting the nexus of predatory violence and drug dealing that has risen to prominence in the minds of many Americans. Controlling for a lagged measure of criminal violence provided a strict test of the independent effect of informal social control on delinquency and also helped to account for other causes of delinquency not captured in the census measures.

The results in Table 3 are straightforward and perhaps even surprising in their continued validation of the neighborhood social-control measure. The standardized effect of informal child control was not only still significant but more than three times the magnitude of effect for violent crime. Although the bivariate correlation between violent crime and later delinquency was significant (.38, $p < .05$), once social control was accounted for, crime was only marginally important (t ratio = 1.96) in predicting later rates of adolescent delinquency.[7] Moreover, when concentrated poverty, ethnicity/immigration, and residential stability were added (Model 2), informal social control retained the same significance and level of magnitude seen in Table 2. Hence, regardless of whether social demographic structure or prior crime was controlled, variations in the measure of child social regulation were related consistently to lower rates of adolescent misbehavior.

DISCUSSION AND IMPLICATIONS

The present study produced two major findings that have potential implications for further research. The first is that child social control and adoles-

cent misbehavior can be measured reliably at the neighborhood level using survey research strategies. In the past, sample surveys have tended to yield microlevel interpretations only. However, surveys such as this one that merge a nested cluster design with questions tapping community-level properties lend themselves to the additional consideration of macrolevel phenomena. Aggregate-level reliabilities on the order of .80, like those reported here, constitute an encouraging sign for future multilevel research on social organizational properties of neighborhoods.

The second and more central conclusion is that variations in neighborhood-level informal social control accord with theoretical predictions in a consistent fashion. There are limitations, to be sure, especially the fact that social controls were not observed directly but rather inferred from informant perceptions. Nonetheless, all three dimensions of ecological structure—concentrated poverty, ethnicity/immigration, and residential stability—explained significant amounts of variation in child social control in the direction predicted. Informal social control also mediated some 50% of the effect of residential stability, consistent with one of the major themes in social disorganization theory (Sampson, 1992). Even after adjusting for the effect of prior levels of crime in the neighborhood, informal social control emerged as a significant inhibitor of adolescent misbehavior.

One agenda for further research would be to extend the logic of the present study to consider social regulation in families and its relation to the community context. As suggested by Furstenberg (1993), for example, community-level variations in informal social control in all likelihood have an indirect influence on individual-level variations in delinquent outcomes as mediated by family management practices. In particular, the monitoring of youth activities and time spent with peers, networks between parents and their children's friends and parents, and the effective and consistent discipline of children are hypothesized to be fostered in neighborhoods characterized by high levels of social cohesion and informal social controls. In turn, strong social control and regulation by families should reduce the probability of delinquent outcomes.

This multilevel conception might shed light on the perplexing finding in previous research that community characteristics have few contextual effects on individual delinquency (see Bursik, 1996). The reason may be that most studies search for direct effects of context on delinquency, even though this may be unwarranted on theoretical grounds. Perhaps because of a focus on direct effects, contextual influences have been rejected prematurely. Supportive of the general thrust of the Furstenberg (1993) argument, it may be that community social control finds its expression in individual-level outcomes largely through the mediating influence of peers, school, and the family.

Research designed to uncover the direct and indirect influences of family and community on delinquency—especially over time—is one of the major goals now being addressed in the PHDCN.

In sum, the findings of the current study indicate that the collective social control of children is an important construct that should be added to theoretical accounts and research projects that stress social regulation in families. Rather than contradicting previous research, an integrated model that combines layers of social regulation at multiple levels seems to be the strategy of choice for further research.

NOTES

1. Ethnographic research provides rich qualitative accounts of community processes central to theoretical concerns (see e.g., Sullivan, 1989), yet it, too, is constrained in the testing of theories by focusing on a single community, or, at most, on a cluster of neighborhoods where community properties do not display sufficient variation (Reiss, 1986b).

2. Cluster analyses of census data also helped guide the construction of internally homogeneous neighborhood clusters (NC) with respect to racial/ethnic mix, socioeconomic status, housing density, and family organization. Random-effects analyses of variance produced intracluster correlation coefficients to assess the degree to which this goal had been achieved; analyses not shown here revealed that the clustering was quite successful in producing the internal homogeneity of NCs. Nonetheless, it should be emphasized that the NCs are still dependent on administratively defined boundaries and hence serve only as a proxy for neighborhood. The use of administrative units as local communities in sociological research is not ideal (see Fischer, 1982, pp. 271-272), but it is virtually a necessity when the interest is macrolevel variations across a large number of areas.

3. The basic design for the community survey had three stages: at stage one, city blocks were sampled within each NC; at stage two, dwelling units were sampled within blocks, and at stage three, one adult resident was sampled within each selected dwelling unit. The plan thus was designed to yield a representative probability sample of Chicago residents and a large enough within-cluster sample to create reliable between-neighborhood measures of theoretical interest. Because the study's interest is between-neighborhood variations and not point estimates, the results presented in this article are based on unweighted data. However, similar to other stratified community designs, (Fischer, 1982, p. 301), analysis of weighted data produces substantively equivalent findings.

4. For respondents who were unsure, a middle category (*neither likely nor unlikely*) was added as a response, resulting in a final 5-point ordinal scale ranging from *very unlikely* through *very likely*.

5. Because the number of individual cases used to create the aggregate measures varied slightly by community, the variance of the residuals is not constant. Therefore, weighted least squares (WLS) regression was used to induce homoscedasticity of error variances: Each case was weighted by the square root of the unweighted sample size (Hanushek & Jackson, 1977, pp. 143, 152), giving more weight to areas with a larger respondent sample.

6. These data reflect the location of incidents known to the police—not arrests. Incident data do not depend on the filter of official decision making by the police and thus are a good

proximate measure of the actual distribution of crime by geographical location. By contrast, it is hard to imagine the capacity of a self-report instrument to generate, retrospectively, the location of predatory crimes. We gratefully acknowledge the assistance of Richard Block, Chip Coulden, and Jeffrey Morenoff in obtaining, cleaning, and aggregating these incident data to the NC level.

7. To assess the robustness of the WLS regression, this analysis was replicated using a hierarchical linear model maximum-likelihood estimate (Bryk & Raudenbush, 1992) of delinquency and social control for the 80 Chicago neighborhoods. The substantive results matched those from ordinary least squares and hence are not presented.

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